State of Washington
DEPARTMENT OF FISH AND WILDLIFE

502 High Street, # 108
Port Orchard, Washington 98366

April 30, 1997

Bremerton-Kitsap County Health District
Environmental Health Division
Attention: Scott Daniels
P. O. Box 1076
Poulsbo, Washington 98370-0050

SUBJECT: Fish Habitat Assessment on Gorst Creek, Tributary to Sinclair Inlet, Kitsap County, WRIA 15.0216

Dear Mr. Daniels;

Per your request, we are providing an assessment of the fish and fish habitat of Gorst Creek. The information below is compiled from several WDFW biologists who have walked the stream over ten or more years. Most of the work has been in the lower watershed where most of the fish production occurs.

Fish Use

Gorst Creek and its tributaries support chinook, chum and coho salmon, as well as steelhead, cutthroat trout and nongame fish species. Adult fish have been observed in the lower watershed during every month of the year, with peak numbers from September through February. Chinook and chum salmon generally are limited to the lower reaches of the stream.

Coho salmon, steelhead and cutthroat trout typically disperse as far up the mainstem and tributaries as the flow allows in a given year. This year, throughout the Kitsap Peninsula area, adult coho were found high in the watersheds as rainfall was above average. On Gorst Creek in past years, adult coho have been observed a short distance upstream of the Old Belfair Highway. During our recent site review, juvenile salmonids were observed approximately 1/2 mile upstream of the Old Belfair Highway crossing, i.e. less than a mile downstream of the landfill slope failure.

Fish habitat is excellent for spawning and rearing salmon and trout species throughout most of Gorst Creek and its tributaries. The portion of the mainstem downstream of Old Belfair Highway is regularly used by salmonids for spawning and rearing. The culvert at the Old Belfair Highway has been documented as a partial migration barrier to salmon. Favorable habitat is found

upstream for about 2/3 mile before the stream flattens out and appears to be seasonal. This reach continues to the culvert outlet at Highway 3. Although the reach between the outlet pipe of the landfill and Highway 3 is moderate gradient, it appears unlikely that fish use the stream due to seasonal water flow at this time.

The portion of the stream upstream of the landfill is seasonal most years and enters the landfill area through a standpipe (precluding any fish migration). It is possible that some resident trout live upstream of the landfill in areas watered year-round, although we have not observed fish in this reach.

In addition, a large chinook rearing project (1-2 million fish) is operated by the Suquamish Tribe in the City of Bremerton property at Jarstad Park. Rearing success is dependent on good water quality in Gorst Creek. The project has experienced some difficulties during high flow years when high sediment loads clog the intake area.

Landslide Impact to fish resources

The area downstream of the landfill to the large wetland area at the break in stream gradient (about 1/2 mile) was impacted by the slope failure. This area received a recent heavy sand and silt load. The sand/silt filled in most of the wetlands associated with the stream causing the stream to braid into several channels and created wide and thick sand/gravel bars along the stream edges. All channels are lined with household garbage material with additional material stacked in debris jams. No other landslides or sources of sand/silt were observed upstream of the gradient break.

Impacts to fish and wildlife resources include:

1) Although the primary impact area was upstream of known fish use, the excess sediment and trash will wash downstream into spawning and rearing areas during future high flow events unless immediately removed and/or stabilized. Sand and silt fill pools used by juvenile salmon and clog spawning gravel areas with fine sediments decreasing water circulation to incubating fish eggs.

2) Fine sediment from the landslide material will be suspended in even moderate flow events causing water turbidity. Heavy or prolonged turbidity can kill fish by clogging or abrading gills, or by impairing feeding ability.

3) Fish rearing can be affected by water chemistry changes. Of particular concern would be a change in pH, chlorine, petroleum products and many heavy metals. During the spring months, juvenile salmon undergo many body chemistry changes in order to prepare for life in saltwater. These fish are particularly sensitive to water chemistry changes.

4) Fish and wildlife can ingest trash items (plastics) which can kill them.

5) The wetlands along the stream have been inundated with sediment. The function and value of these wetlands for fish and wildlife habitat has been impacted.

We recommend the following actions be taken to minimize fish and wildlife impacts.

1) The slope should be stabilized to prevent further sediment/trash input and water quality degradation.

2) Trash should be removed from the stream corridor.

3) The excess sediment in the stream corridor should be manually removed to the greatest extent possible. Large logs or stumps added to the stream channel may assist in trapping sediment in place.

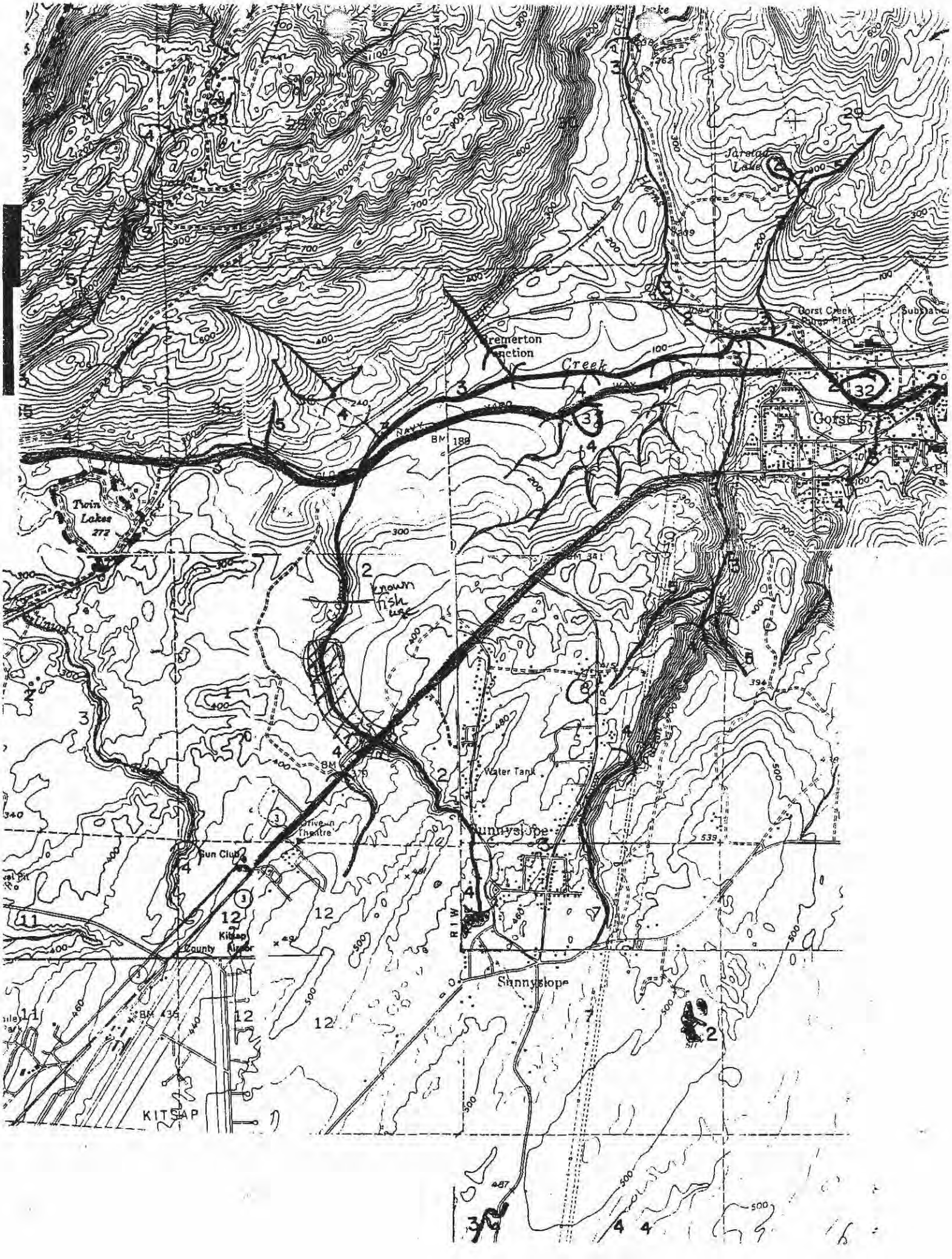
4) The culvert under the landfill should be inspected for structural integrity. A longterm plan to reroute the stream may be necessary.

Most of the cleanup activities suggested would require a Hydraulic Project Approval (HPA) from the Department of Fish and Wildlife. These approvals are free of charge but evaluate how the proposed project would affect fish life. We hope to continue to work with you and the landfill owner to resolve the problem at Gorst Creek. Please contact me at (360)-895-4756 if you have any questions.

Sincerely,

Doris J. Small

Doris J. Small
Area Habitat Biologist


Jarstad Lake
Gorst Creek Power Plant
Gorst
Bremerton Junction
Creek
NAVY
BM 188
Twin Lakes 272
known fish use
Water Tank
Sunnyslope
Drive-in Theatre
Gun Club
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BM 436
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